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Kerr-McGee Oil & Gas Onshore LP
1099 18th Street, Suite 1800
Denver, Colorado 80202
720-929-6000 Fax 720-929-7000

August 11, 2015

Mr. Alex Fischer
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**Re: 2014 Annual Report
Drilling Fluid Management Facility
COGCC Facility ID# 149021
SW 34-T3N-R66W**

Dear Mr. Fischer:

Kerr-McGee Oil and Gas Onshore LP (Kerr-McGee) is submitting this annual report to provide the Colorado Oil & Gas Conservation Commission (COGCC) with the operational details of the Drilling Fluid Management Facility (DFMF) for 2014. Per the operating plan provided to the COGCC in the DFMF permit, pods will remain fallow for at least one year after its final application.

Between July 18, 2014 and December 31, 2014, Kerr-McGee spread and incorporated approximately 21,644 cubic yards of water-based bentonitic drilling fluids and associated drill cuttings (fluids/cuttings). The date the fluids/cuttings were spread, the well name and number where they were generated, the volume spread, the waste transporter, and the pod location where they were land applied is presented in Table 1. Fluids/cuttings were spread and incorporated in pods 2D, 3D, 4B, 4C, and 4D in 2014. In pod 1D, the fluids/cuttings were spread in late 2014 but not yet incorporated. Sample results for pod 1D will be included in the 2015 annual report. A map of the approximately 10 acre pods is attached as Figure 1.

On April 12, 2015 one discrete confirmation soil sample was collected from an interval of 0 to 6 inches below ground surface (bgs) from those pods (2D, 3D, 4B, 4C, and 4D) where fluids/cuttings were spread and incorporated in 2014. Please note the exclusion of pod 1D again, as the fluids/cutting were not yet incorporated at the time of the annual sampling. Samples were submitted and analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), pH, specific conductance (EC), sodium adsorption ratio (SAR), toxicity characteristic leaching procedure (TCLP) arsenic, and Table 910-1 metals (excluding boron). The analytical results and methods are presented in Table 2. The analytical results confirmed that all sample concentrations but one pod were below COGCC allowable levels except the arsenic concentrations in all samples. Pod 4C was above the allowable level for TPH. After further incorporation, this pod was resampled on July 29, 2015 and the concentration was below COGCC allowable levels. The total arsenic concentrations in all pods were above the COGCC allowable level of 0.39 mg/kg in all pods; however, all samples were below the United States

1900 mg/kg

Geological Survey (USGS) total arsenic background concentration of 7.72 mg/kg for the Valent-Julesberg soil association presented to the COGCC in Kerr-McGee's "Request for Arsenic Sampling Determination Pursuant to Table 910-1, Footnote 1". All TCLP arsenic sample concentrations were below their reported method detection limits. The laboratory analytical results are attached. Based upon the sample concentrations, Kerr-McGee is requesting to apply an additional 3-inch lift of cuttings to pods 2D, 3D, 4B, 4C, and 4D.

Feel free to contact me at 720-929-6368 or Mike.Dinkel@anadarko.com if you have any questions regarding this report or require additional information.

Sincerely,

Kerr-McGee Oil & Gas Onshore LP



Mike Dinkel
Staff HSE Representative

Attachments

Cc: Robert Chesson
John Axelson
Heather Barbare



STATE OF
COLORADO

Fischer - DNR, Alex <alex.fischer@state.co.us>

Facility ID: 149021 Drilling Fluids Management Facility

1 message

Fischer - DNR, Alex <alex.fischer@state.co.us>
To: "Dinkel, Mike" <Mike.Dinkel@anadarko.com>

Mon, Aug 17, 2015 at 10:40 AM

Mike,

Thanks for submitting the 2014 Annual Report for the above referenced Facility. Kerr-McGee's request to apply and additional 3-inch lift of cuttings to pods 2C, 3D, B, and 4D is approved.

On future submittals, please submit via eForm Sundry.

Thanks
Alex

—

Alex Fischer, P.G.

Environmental Supervisor, Western Colorado



COLORADO

**Oil & Gas Conservation
Commission**

Department of Natural Resources

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Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

Date	Well Name & Number	Loads	Yards	Transporter	Pod
7/18/2014	Benson Farms 14N-19HZ	17	119	Goldman	4B-4C
7/19/2014	Benson Farms 14N-19HZ	11	77	Goldman	4B-4C
7/19/2014	Howard 30C-29HZ	19	133	Goldman	4B-4C
7/20/2014	Benson Farms 14N-19HZ	7	49	Goldman	4B-4C
7/20/2014	Vogl State 38N-36HZ	7	49	Goldman	4B-4C
7/20/2014	Howard 30C-29HZ	7	49	Goldman	4B-4C
7/20/2014	Roberts 35N-22HZ	15	105	Goldman	4B-4C
7/20/2014	Sickler 27C-34HZ	15	105	Goldman	4B-4C
7/21/2014	Benson Farms 14N-19HZ	5	35	Goldman/Miller	4B-4C
7/21/2014	Benson Farms 32C-23HZ	12	84	Goldman	4B-4C
7/21/2014	Barefoot 33C-25HZ	3	21	Goldman	4B-4C
7/21/2014	Morning Fresh 14N-22HZ	17	119	Goldman	4B-4C
7/21/2014	Sickler 27C-34HZ	7	49	Goldman	4B-4C
7/21/2014	Dugite 34N-35HZ	7	49	Goldman	4B-4C
7/22/2014	Benson Farms 14N-19HZ	2	14	Goldman	4B-4C
7/22/2014	Benson Farms 32C-23HZ	8	56	Goldman/Miller	4B-4C
7/22/2014	Dugite 34N-35HZ	1	7	Goldman	4B-4C
7/22/2014	Morning Fresh 35N-15HZ	7	49	Goldman	4B-4C
7/22/2014	Barefoot 33C-25HZ	7	49	Goldman/Miller	4B-4C
7/22/2014	Sickler 27C-34HZ	2	14	Goldman	4B-4C
7/22/2014	Howard 30C-29HZ	8	56	Goldman/Miller	4B-4C
7/23/2014	Sickler 1N-34HZ	4	28	Goldman/Miller	4B-4C
7/23/2014	Vogl State 38N-36HZ	6	42	Goldman	4B-4C
7/23/2014	Barefoot 33C-25HZ	2	14	Goldman/Miller	4B-4C
7/23/2014	NRC 28C-32HZ	11	77	Goldman	4B-4C
7/23/2014	Benson Farms 14N-19HZ	1	7	Goldman	4B-4C
7/23/2014	Howard 30C-29HZ	1	7	Goldman	4B-4C
7/24/2014	Benson Farms 25C-19HZ	21	147	Goldman/Miller	4B-4C
7/24/2014	Barefoot 33C-25HZ	4	28	Goldman	4B-4C
7/24/2014	Howard 30C-29HZ	3	21	Goldman	4B-4C
7/25/2014	Howard 30C-29HZ	4	28	Goldman	4B-4C
7/26/2014	Howard 30C-29HZ	1	7	Goldman	4B-4C
7/27/2014	Howard 30C-29HZ	5	35	Goldman	4B-4C
7/28/2014	Howard 28N-29HZ	10	70	Goldman	4B-4C
7/24/2014	Benson Farms 14N-19HZ	8	56	Goldman	4B-4C
7/25/2014	Benson Farms 14N-19HZ	10	70	Goldman	4B-4C
7/28/2014	Benson Farms 14N-19HZ	5	35	Goldman	4B-4C
7/29/2014	Howard 28N-29HZ	9	63	Goldman	4B-4C
7/29/2014	Benson Farms 13N-23HZ	6	42	Goldman	4B-4C
7/30/2014	Benson Farms 13N-23HZ	18	126	Goldman	4B-4C
7/30/2014	Howard 28N-29HZ	6	42	Goldman	4B-4C
7/31/2014	Benson Farms 13N-23HZ	10	70	Goldman	4B-4C
7/31/2014	Howard 4N-29HZ	8	56	Goldman	4B-4C
8/1/2014	Benson Farms 13N-23HZ	1	7	Goldman	4B-4C
8/1/2014	Howard 28N-29HZ	1	7	Goldman	4B-4C
8/2/2014	Benson Farms 13N-23HZ	7	49	Goldman	4B-4C
8/2/2014	Howard 4N-29HZ	17	119	Goldman	4B-4C
8/2/2014	Howard 28N-29HZ	8	56	Goldman	4B-4C
8/3/2014	Howard 28N-29HZ	4	28	Goldman	4B-4C
8/3/2014	Benson Farms 13N-23HZ	2	14	Goldman	4B-4C
8/3/2014	Howard 4N-29HZ	5	35	Goldman	4B-4C
8/4/2014	Howard 28N-29HZ	3	21	Goldman	4B-4C
8/4/2014	Howard 4N-29HZ	3	21	Goldman	4B-4C

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

8/5/2014	Benson Farms 13N-23HZ	1	7	Goldman	4B-4C
8/6/2014	Benson Farms 14C-23HZ	25	175	Goldman	4B-4C
8/6/2014	Howard 4N-29HZ	5	35	Goldman	4B-4C
8/7/2014	Benson Farms 14C-23HZ	2	14	Goldman	4B-4C
8/7/2014	Howard 4N-29HZ	4	28	Goldman	4B-4C
8/8/2014	Howard 4N-29HZ	4	28	Goldman	4B-4C
8/8/2014	Benson Farms 14C-23HZ	1	7	Goldman	4B-4C
8/9/2014	Benson Farms 14C-23HZ	9	63	Goldman/Miller	4B-4C
8/10/2014	Benson Farms 14C-23HZ	10	70	Goldman	4B-4C
8/10/2014	Howard 4N-29HZ	6	42	Goldman	4B-4C
8/11/2014	Benson Farms 14C-23HZ	9	63	Goldman/Miller	4B-4C
8/11/2014	Howard 29C-29HZ	6	42	Goldman/Miller	4B-4C
8/5/2014	Howard 28N-29HZ	4	28	Goldman	4B-4C
8/12/2014	Howard 28N-29HZ	3	21	Goldman	4B-4C
8/12/2014	Howard 29C-29HZ	10	70	Goldman/Miller	4B-4C
8/12/2014	Benson Farms 14C-23HZ	1	7	Goldman	4B-4C
8/13/2014	Howard 28N-29HZ	2	14	Goldman/Miller	4B-4C
8/13/2014	Howard 29C-29HZ	4	28	Goldman/Miller	4B-4C
8/13/2014	Benson Farms 14C-23HZ	1	7	Goldman	4B-4C
8/14/2014	Howard 3C-29HZ	5	35	Goldman	4B-4C
8/14/2014	Benson Farms 13C-23HZ	11	77	Goldman/Miller	4B-4C
8/14/2014	Douthit 8N-27HZ	14	98	Goldman	4B-4C
8/15/2014	Benson Farms 13C-23HZ	8	56	Goldman/Miller	4B-4C
8/15/2014	Howard 3C-29HZ	8	56	Goldman	4B-4C
8/16/2014	Howard 29C-29HZ	16	112	Goldman	4B-4C
8/16/2014	Benson Farms 13C-23HZ	2	14	Goldman	4B-4C
8/16/2014	Howard 3C-29HZ	12	84	Goldman	4B-4C
8/17/2014	Howard 3C-29HZ	7	49	Goldman	4B-4C
8/17/2014	Vogl State 13C-35HZ	3	21	Goldman	4B-4C
8/18/2014	Howard 29C-29HZ	6	42	Goldman	4B-4C
8/18/2014	Howard 3C-29HZ	3	21	Goldman/Miller	4B-4C
8/18/2014	Vogl State 13C-35HZ	3	21	Goldman	4B-4C
8/19/2014	Vogl State 13C-35HZ	3	21	Goldman	4B-4C
8/19/2014	Howard 29C-29HZ	3	21	Goldman/Miller	4B-4C
8/20/2014	Vogl Stae 16C-36HZ	15	105	Goldman/Miller	4B-4C
8/20/2014	Howard 3C-29HZ	1	7	Goldman	4B-4C
8/20/2014	Howard 3C-29HZ	2	14	Goldman	4B-4C
8/21/2014	Vogl Stae 16C-36HZ	2	14	Goldman/Miller	4B-4C
8/20/2014	Howard 29C-29HZ	1	7	Goldman	4B-4C
8/21/2014	Howard 29C-29HZ	2	14	Goldman	4B-4C
8/21/2014	Howard 3C-29HZ	2	14	Goldman	4B-4C
8/22/2014	Howard 29C-29HZ	4	28	Goldman	4B-4C
8/22/2014	Vogl Stae 16C-36HZ	2	14	Goldman	4B-4C
8/22/2014	Howard 3C-29HZ	1	7	Goldman	4B-4C
8/23/2014	ST. Acacius State 41C-36HZ	10	70	Goldman	4B-4C
8/23/2014	Vogl State 16C-36HZ	3	21	Goldman/Miller	4B-4C
8/23/2014	Howard 29C-29HZ	4	28	Goldman	4B-4C
8/23/2014	Howard 3C-29HZ	4	28	Goldman	4B-4C
8/24/2014	ST. Acacius State 41C-36HZ	11	77	Goldman/Miller	4B-4C
8/25/2014	Howard 3C-29HZ	5	35	Goldman/Miller	4B-4C
8/25/2014	ST. Acacius State 41C-36HZ	4	28	Goldman	4B-4C
8/25/2014	Vogl State 16C-36HZ	4	28	Goldman	4B-4C
8/26/2014	ST. Acacius State 40N-36HZ	10	70	Goldman/Miller	4B-4C
8/26/2014	Vogl State 16C-36HZ	5	35	Goldman	4B-4C

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

8/26/2014	Howard 3C-29HZ	1	7	Goldman	4B-4C
8/27/2014	ST. Acacius State 40N-36HZ	16	112	Goldman/Miller	4B-4C
8/27/2014	Vogl State 16C-36HZ	3	21	Goldman/Miller	4B-4C
8/28/2014	Vogl State 16C-36HZ	6	42	Goldman/Miller	4B-4C
8/28/2014	ST. Acacius State 40N-36HZ	4	28	Goldman/Miller	4B-4C
8/29/2014	ST. Acacius State 40N-36HZ	1	7	Goldman	4B-4C
8/29/2014	Vogl State 34N-35HZ	8	56	Goldman	4B-4C
8/29/2014	Howard 3C-29HZ	3	21	Goldman	4B-4C
8/30/2014	Vogl State 34N-35HZ	19	133	Goldman/Miller	4B-4C
8/30/2014	Howard 6N-29HZ	6	42	Goldman	4B-4C
8/30/2014	ST. Acacius State 40C-36HZ	5	35	Goldman/Miller	4B-4C
8/31/2014	Howard 6N-29HZ	18	126	Goldman	4B-4C
8/31/2014	Vogl State 34N-35HZ	4	28	Goldman/Miller	4B-4C
8/31/2014	ST. Acacius State 40C-36HZ	13	91	Goldman/Miller	4B-4C
9/1/2014	ST. Acacius State 40C-36HZ	4	28	Goldman	4B-4C
9/1/2014	Howard 6N-29HZ	8	56	Goldman	4B-4C
9/2/2014	Howard 6N-29HZ	4	28	Goldman	4B-4C
9/2/2014	Vogl State 34N-35HZ	1	7	Goldman	4B-4C
9/2/2014	ST. Acacius State 40C-36HZ	5	35	Goldman/Miller	4B-4C
9/3/2014	ST. Acacius State 40C-36HZ	12	84	Goldman	4B-4C
9/3/2014	Howard 6N-29HZ	3	21	Goldman/Miller	4B-4C
9/4/2014	Vogl State 34N-35HZ	5	35	Goldman/Miller	4B-4C
9/5/2014	Howard 6N-29HZ	3	21	Goldman/Miller	4B-4C
9/6/2014	Vogl State 34N-35HZ	5	35	Goldman/Miller	4B-4C
9/6/2014	Howard 6N-29HZ	4	28	Goldman	4B-4C
9/7/2014	Vogl State 34N-35HZ	4	28	Goldman/Miller	4B-4C
9/7/2014	Howard 6N-29HZ	5	35	Goldman/Miller	4B-4C
9/8/2014	Vogl State 34N-35HZ	4	28	Goldman/Miller	4B-4C
9/8/2014	Howard 6N-29HZ	3	21	Goldman	4B-4C
9/9/2014	Howard 6N-29HZ	4	28	Goldman/Miller	4B-4C
9/9/2014	Vogl State 34N-35HZ	3	21	Goldman	4B-4C
9/10/2014	Vogl State 38N-36HZ	3	21	Goldman	4B-4C
9/10/2014	Howard 6N-29HZ	1	7	Goldman	4B-4C
9/11/2014	Vogl State 38N-36HZ	7	49	Goldman/Miller	4B-4C
9/12/2014	Vogl State 38N-36HZ	11	77	Goldman	4B-4C
9/12/2014	Howard 6N-29HZ	4	28	Goldman	4B-4C
9/13/2014	Vogl State 38N-36HZ	4	28	Goldman	4B-4C
9/14/2014	Vogl State 38N-36HZ	2	14	Goldman	4B-4C
9/15/2014	Vogl State 38N-36HZ	7	49	Goldman/Miller	4B-4C
9/16/2014	Sack 15C-6HZ	14	98	Goldman	4B-4C
9/16/2014	Vogl State 38N-36HZ	2	14	Goldman	4B-4C
9/17/2014	Sack 15C-6HZ	9	63	Goldman	4B-4C
9/17/2014	Vogl State 38N-36HZ	5	35	Goldman	4B-4C
9/18/2014	Vogl State 38N-36HZ	4	28	Goldman	4B-4C
9/19/2014	Vogl State 38N-35HZ	8	56	Goldman	4B-4C
9/19/2014	Sack 15C-6HZ	3	21	Goldman	4B-4C
9/20/2014	Sack 15C-6HZ	4	28	Goldman/Miller	4B-4C
9/21/2014	Sack 28N-30HZ	15	105	Goldman	4B-4C
9/22/2014	Sack 28N-30HZ	8	56	Goldman	4B-4C
9/22/2014	Douthit 38N-27HZ	10	70	Goldman/Miller	4B-4C
9/23/2014	Douthit 38N-27HZ	6	42	Goldman	4B-4C
9/23/2014	Sack 28N-30HZ	4	28	Goldman	4B-4C
9/24/2014	Sack 28N-30HZ	3	21	Goldman	4B-4C
9/24/2014	Douthit State 38N-27HZ	5	35	Goldman/Miller	4B-4C

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

9/26/2014	Sack 28N-30HZ	9	63	Goldman	4B-4C
9/26/2014	Douthit State 38N-27HZ	2	14	Goldman	4B-4C
9/27/2014	Sack 37N-30HZ	15	105	Goldman/Miller	4B-4C
9/27/2014	Douthit State 38N-27HZ	4	28	Goldman	4B-4C
9/27/2014	Kerr 13C-25HZ	4	28	Goldman	4B-4C
9/28/2014	Douthit State 38N-27HZ	6	42	Goldman	4B-4C
9/28/2014	Kerr 13C-25HZ	20	140	Goldman	4B-4C
9/28/2014	Sack 37N-30HZ	11	77	Goldman	4B-4C
9/29/2014	Sack 37N-30HZ	7	49	Goldman	4B-4C
9/29/2014	Kerr 13C-25HZ	1	7	Goldman	4B-4C
9/29/2014	Douthit State 38N-27HZ	2	14	Goldman	4B-4C
9/30/2014	Kerr 13C-25HZ	7	49	Goldman	4B-4C
9/30/2014	Douthit State 38N-27HZ	6	42	Goldman/Miller	4B-4C
9/30/2014	Ranchview 28C-11HZ	18	126	Goldman	4B-4C
10/1/2014	Ranchview 28C-11HZ	6	42	Goldman/Miller	4B-4C
10/1/2014	Douthit State 38N-27HZ	15	105	Goldman	4B-4C
10/1/2014	Sack 2C-30HZ	6	42	Goldman	4B-4C
10/2/2014	Ranchview 28C-11HZ	9	63	Goldman	4D
10/2/2014	Douthit State 38N-27HZ	7	49	Goldman/Miller	4D
10/2/2014	Sack 2C-30HZ	7	49	Goldman/Miller	4D
10/2/2014	Kerr 13C-25HZ	6	42	Goldman	4D
10/3/2014	Kerr 4N-12HZ	4	28	Goldman	4D
10/3/2014	Ranchview 28C-11HZ	2	14	Goldman	4D
10/3/2014	Sack 2C-30HZ	17	119	Goldman	4D
10/4/2014	Kerr 4N-12HZ	3	21	Goldman	4D
10/4/2014	Douthit State 38N-27HZ	3	21	Goldman/Miller	4D
10/4/2014	Ranchview 28C-11HZ	6	42	Goldman	4D
10/4/2014	Sack 2C-30HZ	7	49	Goldman	4D
10/5/2014	Douthit 16C-27HZ	5	35	Goldman	4D
10/5/2014	Ranchview 28C-11HZ	8	56	Goldman	4D
10/6/2014	Kerr 4N-12HZ	10	70	Goldman/Miller	4D
10/6/2014	Douthit 16C-27HZ	4	28	Goldman/Miller	4D
10/6/2014	Summit 34C-32HZ	9	63	Goldman/Miller	4D
10/6/2014	Ranchview 28C-11HZ	5	35	Goldman	4D
10/6/2014	Sack 2C-30HZ	3	21	Goldman	4D
10/7/2014	Douthit 16C-27HZ	2	14	Goldman	4D
10/7/2014	Kerr 4N-12HZ	3	21	Goldman	4D
10/7/2014	Ranchview 28C-11HZ	2	14	Goldman	4D
10/8/2014	Sack 27N-30HZ	13	91	Goldman	4D
10/8/2014	Kerr 4N-12HZ	15	105	Goldman	4D
10/8/2014	Douthit 16C-27HZ	1	7	Goldman	4D
10/9/2014	Douthit 16C-27HZ	10	70	Goldman	4D
10/9/2014	Sack 27N-30HZ	13	91	Goldman/Miller	4D
10/9/2014	Kerr 4N-12HZ	10	70	Goldman	4D
10/9/2014	Ranchview 28C-11HZ	6	42	Goldman/Miller	4D
10/10/2014	Kerr 34C-12HZ	6	42	Goldman	4D
10/10/2014	Ranchview 3N-11HZ	12	84	Goldman	4D
10/10/2014	Douthit State 39N-27HZ	6	42	Goldman	4D
10/11/2014	Douthit State 39N-27HZ	3	21	Goldman	4D
10/11/2014	Sack 27N-30HZ	11	77	Goldman	4D
10/11/2014	Ranchview 3N-11HZ	9	63	Goldman	4D
10/12/2014	Douthit State 39N-27HZ	6	42	Goldman	4D
10/12/2014	Kerr 34C-12HZ	9	63	Goldman	4D
10/12/2014	Ranchview 3N-11HZ	5	35	Goldman	4D

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

10/12/2014	Sack 27N-30HZ	5	35	Goldman	4D
10/13/2014	Douthit State 39N-27HZ	3	21	Goldman	4D
10/13/2014	Sack 37C-6HZ	4	28	Goldman	4D
10/13/2014	Sack 37C-6HZ	9	63	Goldman	4D
10/14/2014	Sack 37C-6HZ	3	21	Goldman	4D
10/14/2014	Ranchview 3N-11HZ	6	42	Goldman	4D
10/14/2014	Sack 37C-6HZ	14	98	Goldman/Miller	4D
10/15/2014	Ranchview 3N-11HZ	9	63	Goldman	4D
10/15/2014	Sack 37C-6HZ	11	77	Goldman	4D
10/15/2014	Douthit State 39N-27HZ	8	56	Goldman	4D
10/16/2014	ST. Acacius State 41C-36HZ	4	28	Goldman	4D
10/16/2014	Ranchview 3N-11HZ	2	14	Goldman	4D
10/16/2014	Douthit State 39N-27HZ	2	14	Goldman	4D
10/16/2014	Sack 37C-6HZ	2	14	Goldman	4D
10/17/2014	Hansen State 26C-36HZ	2	14	Goldman	4D
10/17/2014	Sack 37C-6HZ	4	28	Goldman	4D
10/17/2014	Ranchview 3N-11HZ	4	28	Goldman	4D
10/17/2014	Douthit State 39N-27HZ	2	14	Goldman	4D
10/18/2014	Douthit 9C-27HZ	12	84	Goldman/Miller	4D
10/18/2014	Ranchview 3N-11HZ	1	7	Goldman	4D
10/18/2014	Hansen State 26C-36HZ	12	84	Goldman/Miller	4D
10/19/2014	Ranchview 3N-11HZ	10	70	Goldman	4D
10/19/2014	Douthit 9C-27HZ	12	84	Goldman	4D
10/19/2014	Hansen State 26C-36HZ	13	91	Goldman	4D
10/20/2014	Douthit 9C-27HZ	5	35	Goldman	4D
10/20/2014	Sack 37C-6HZ	4	28	Goldman	4D
10/20/2014	Ranch View 3C-11HZ	11	77	Goldman/Miller	4D
10/20/2014	Hansen State 26C-36HZ	2	14	Goldman/Miller	4D
10/21/2014	Ranch View 3C-11HZ	5	35	Goldman	4D
10/22/2014	Douthit 9C-27HZ	8	56	Goldman	4D
10/22/2014	Ranch View 3C-11HZ	5	35	Goldman	4D
10/22/2014	Hansen State 26C-36HZ	4	28	Goldman	4D
10/23/2014	Douthit 9C-27HZ	6	42	Goldman/Miller	4D
10/23/2014	Ranch View 3C-11HZ	4	28	Goldman	4D
10/23/2014	Thomsen 1C-18HZ	4	28	Goldman	4D
10/23/2014	Hansen State 26C-36HZ	3	21	Goldman/Miller	4D
10/24/2014	Ranch View 3C-11HZ	4	28	Goldman/Miller	3D
10/24/2014	Hansen State 26C-36HZ	5	35	Goldman/Miller	3D
10/24/2014	Douthit 9C-27HZ	3	21	Goldman/Miller	3D
10/25/2014	Ranch View 3C-11HZ	6	42	Goldman/Miller	3D
10/25/2014	Hansen State 26C-36HZ	5	35	Goldman/Miller	3D
10/25/2014	Douthit 9C-27HZ	2	14	Goldman/Miller	3D
10/26/2014	Hansen State 26C-36HZ	2	14	Goldman	3D
10/26/2014	Douthit 9C-27HZ	1	7	Goldman	3D
10/26/2014	Ranch View 3C-11HZ	5	35	Goldman	3D
10/27/2014	Hansen State 26C-36HZ	4	28	Goldman/Miller	3D
10/27/2014	Ranch View 3C-11HZ	3	21	Goldman	3D
10/27/2014	Douthit 9C-27HZ	1	7	Goldman	3D
10/28/2014	Ranch View 3C-11HZ	1	7	Goldman	3D
10/28/2014	Hansen State 26C-36HZ	1	7	Goldman	3D
10/29/2014	Thomsen 1C-18HZ	8	56	Goldman	3D
10/28/2014	Douthit 40N-27HZ	5	35	Goldman	3D
10/29/2014	Douthit 40N-27HZ	8	56	Goldman	3D
10/30/2014	Douthit 40N-27HZ	5	35	Goldman/Miller	3D

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

10/30/2014	Hansen State 26C-36HZ	7	49	Goldman	3D
10/30/2014	Thomsen 1C-18HZ	1	7	Goldman	3D
10/31/2014	Thomsen 1C-18HZ	5	35	Goldman/Miller	3D
10/31/2014	Hansen State 26C-36HZ	1	7	Goldman	3D
10/31/2014	Douthit 40N-27HZ	3	21	Goldman/Miller	3D
11/1/2014	Hansen State 1N-36HZ	23	161	Goldman	3D
11/2/2014	Hansen State 1N-36HZ	7	49	Goldman	3D
11/2/2014	Thomsen 1C-18HZ	5	35	Goldman	3D
11/2/2014	Douthit 40N-27HZ	5	35	Goldman	3D
11/3/2014	Kerr 13N-25HZ	22	154	Goldman	3D
11/3/2014	Thomsen 1C-18HZ	6	42	Goldman/Miller	3D
11/3/2014	Hansen State 1N-36HZ	2	14	Goldman/Miller	3D
11/3/2014	Douthit 40N-27HZ	5	35	Goldman/Miller	3D
11/4/2014	Hansen State 1N-36HZ	5	35	Goldman/Miller	3D
11/4/2014	Thomsen 2N-18HZ	6	42	Goldman/Miller	3D
11/4/2014	Kerr 13N-25HZ	4	28	Goldman/Miller	3D
11/4/2014	Douthit 40N-27HZ	2	14	Goldman	3D
11/5/2014	Thomsen 2N-18HZ	12	84	Goldman	3D
11/5/2014	Hansen State 1N-36HZ	11	77	Goldman/Miller	3D
11/5/2014	Douthit 40N-27HZ	4	28	Goldman/Miller	3D
11/6/2014	Douthit 40N-27HZ	6	42	Goldman/Miller	3D
11/6/2014	Hansen State 1N-36HZ	2	14	Goldman/Miller	3D
11/6/2014	Thomsen 2N-18HZ	4	28	Goldman	3D
11/7/2014	Hansen State 1N-36HZ	11	77	Goldman/Miller	3D
11/7/2014	Thomsen 2N-18HZ	1	7	Goldman	3D
11/8/2014	Hansen State 1N-36HZ	1	7	Goldman/Miller	3D
11/8/2014	Thomsen 2N-18HZ	3	21	Goldman/Miller	3D
11/9/2014	Thomsen 2N-18HZ	10	70	Goldman	3D
11/9/2014	Hansen State 1N-36HZ	13	91	Goldman	3D
11/10/2014	Thomsen 2N-18HZ	1	7	Goldman/Miller	3D
11/10/2014	Hansen State 1N-36HZ	8	56	Goldman/Miller	3D
11/11/2014	Hansen State 1N-36HZ	1	7	Goldman	3D
11/12/2014	Thomsen 2N-18HZ	4	28	Goldman	3D
11/13/2014	Thomsen 3N-18HZ	5	35	Goldman/Miller	3D
11/14/2014	Thomsen 3N-18HZ	7	49	Goldman/Miller	3D
11/15/2014	Thomsen 3N-18HZ	14	98	Goldman/Miller	3D
11/16/2014	Thomsen 3N-18HZ	6	42	Goldman	3D
11/18/2014	Scott 28C-32HZ	54	378	Goldman	2D
11/18/2014	Thomsen 3N-18HZ	2	14	Goldman	3D
11/19/2014	Hansen State 1N-36HZ	10	70	Goldman	3D
11/19/2014	Gee 26C-12HZ	3	21	Goldman	3D
11/19/2014	Thomsen 3N-18HZ	5	35	Goldman	3D
11/19/2014	Gee 26C-12HZ	3	21	Goldman	3D
11/20/2014	Gee 26C-12HZ	9	63	Goldman	3D
11/20/2014	Kerr 35N-25HZ	11	77	Goldman	3D
11/21/2014	Gee 26C-12HZ	8	56	Goldman	3D
11/21/2014	Thomsen 3N-18HZ	5	35	Goldman/Miller	3D
11/22/2014	Thomsen 3N-18HZ	7	49	Goldman	3D
11/23/2014	Gee 26C-12HZ	9	63	Goldman	3D
11/23/2014	Thomsen 3N-18HZ	2	14	Goldman	3D
11/24/2014	Gee 26C-12HZ	11	77	Goldman/Miller	3D
11/24/2014	Thomsen 3N-18HZ	1	7	Goldman	3D
11/25/2014	Thomsen 4N-18HZ	15	105	Goldman	3D
11/25/2014	Gee 16N-25HZ	7	49	Goldman/Miller	3D

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

11/26/2014	Gee 16N-25HZ	6	42	Goldman	3D
11/26/2014	Thomsen 4N-18HZ	4	28	Goldman	3D
11/27/2014	Gee 16N-25HZ	1	7	Goldman	3D
11/28/2014	Gee 16N-25HZ	8	56	Goldman/Miller	3D
11/28/2014	Thomsen 4N-18HZ	4	28	Goldman	3D
11/29/2014	Gee 16C-25HZ	11	77	Goldman/Miller	3D
11/29/2014	Kerr 29C-12HZ	3	21	Goldman/Miller	3D
11/29/2014	Thomsen 4N-18HZ	2	14	Goldman	3D
11/30/2014	Thomsen 4N-18HZ	5	35	Goldman	3D
11/30/2014	Gee 16C-25HZ	12	84	Goldman	3D
11/22/2014	Kerr 35N-25HZ	8	56	Goldman/Miller	3D
11/23/2014	Kerr 35N-25HZ	10	70	Goldman	3D
11/24/2014	Kerr 35N-25HZ	4	28	Goldman/Miller	3D
11/25/2014	Kerr 35N-25HZ	7	49	Goldman/Miller	3D
11/26/2014	Kerr 35N-25HZ	3	21	Goldman/Miller	3D
11/28/2014	Kerr 35N-25HZ	3	21	Goldman	3D
11/29/2014	Kerr 29C-12HZ	3	21	Goldman/Miller	3D
11/30/2014	Kerr 29C-12HZ	11	77	Goldman	3D
12/1/2014	Kerr 29C-12HZ	18	126	Goldman/Miller	3D
12/1/2014	Gee 16C-25HZ	2	14	Goldman/Miller	3D
12/1/2014	Thomsen 4N-18HZ	3	21	Goldman	3D
12/2/2014	Kerr 29C-12HZ	6	42	Goldman/Miller	3D
12/2/2014	Thomsen 4N-18HZ	1	7	Goldman	3D
12/2/2014	Elliot 1-18HZ	51	357	Goldman	2D
12/3/2014	Elliot 1-18HZ	86	602	Goldman	2D
12/3/2014	Kerr 29C-12HZ	5	35	Goldman/Miller	2D
12/3/2014	Gee 16C-25HZ	6	42	Goldman	2D
12/3/2014	Thomsen 4N-18HZ	1	7	Goldman	2D
12/4/2014	Elliot 1-18HZ	104	728	Goldman	2D
12/5/2014	Elliot 4-17HZ	85	595	Goldman	2D
12/6/2014	Elliot 4-17HZ	58	406	Goldman	2D
12/8/2014	Elliot 4-17HZ	112	784	Goldman	1D
12/4/2014	Kerr 29C-12HZ	9	63	Goldman/Miller	2D
12/5/2014	Kerr 29C-12HZ	2	14	Miller	2D
12/6/2014	Kerr 29C-12HZ	7	49	Goldman	2D
12/7/2014	Kerr 29C-12HZ	13	91	Goldman	2D
12/8/2014	Kerr 29C-12HZ	13	91	Goldman/Miller	2D
12/9/2014	Kerr 14C-12HZ	12	84	Goldman/Miller	2D
12/10/2014	Kerr 14C-25HZ	16	112	Goldman	2D
12/11/2014	Kerr 14C-25HZ	3	21	Goldman/Miller	1D
12/12/2014	Kerr 14C-25HZ	17	119	Goldman/Miller	1D
12/13/2014	Kerr 14C-25HZ	10	70	Goldman	1D
12/14/2014	Kerr 14C-25HZ	15	105	Goldman	1D
12/14/2014	Gee 15N-25HZ	11	77	Goldman	1D
12/15/2014	Gee 15N-25HZ	9	63	Goldman/Miller	1D
12/15/2014	Kerr 14C-25HZ	16	112	Goldman/Miller	1D
12/16/2014	Kerr 14C-25HZ	5	35	Goldman/Miller	1D
12/16/2014	Gee 15N-25HZ	3	21	Goldman	1D
12/17/2014	Gee 15N-25HZ	3	21	Goldman/Miller	1D
12/18/2014	Kerr 14N-25HZ	5	35	Goldman/Miller	1D
12/18/2014	Gee 2C-12HZ	2	14	Goldman/Miller	1D
12/19/2014	Kerr 14N-25HZ	15	105	Goldman/Miller	1D
12/20/2014	Kerr 14N-25HZ	11	77	Goldman/Miller	1D
12/19/2014	Gee 2C-12HZ	17	119	Goldman	1D

Kerr-McGee Oil and Gas Onshore, LP

DFMF Log Sheet

Table 1

12/20/2014	Gee 2C-12HZ	3	21	Goldman	1D
12/21/2014	Kerr 14N-25HZ	6	42	Goldman	1D
12/21/2014	Gee 2C-12HZ	14	98	Goldman	1D
12/22/2014	Kerr 14N-25HZ	5	35	Goldman/Miller	1D
12/22/2014	Gee 2C-12HZ	5	35	Goldman/Miller	1D
12/23/2014	Gee 15C-25HZ	15	105	Goldman/Miller	1D
12/23/2014	Kerr 14N-25HZ	7	49	Goldman/Miller	1D
12/24/2014	Gee 15C-25HZ	8	56	Goldman	1D
12/24/2014	Kerr 14N-25HZ	11	77	Goldman/Miller	1D
12/25/2014	Kerr 14N-25HZ	6	42	Goldman	1D
12/26/2014	Kerr 14N-25HZ	12	84	Goldman/Miller	1D
12/27/2014	Gee 37N-25HZ	7	49	Goldman	1D
12/27/2014	Kerr 14N-25HZ	7	49	Goldman	1D
12/28/2014	Gee 37N-25HZ	24	168	Goldman	1D
12/29/2014	Keer 14N-25HZ	6	42	Goldman/Miller	1D
12/29/2014	Gee 37N-25HZ	1	7	Goldman	1D
12/30/2014	Kerr 14N-25HZ	5	35	Goldman	1D
12/31/2014	Kerr 28N-12HZ	4	28	Goldman/Miller	1D
	Total	3092	21644		

TABLE 2

2014 DFMF FINAL INCORPORATION RESULTS
KERR-McGEE OIL AND GAS ONSHORE LLC

Pod Number	Date Sampled	Sample ID	TPH (mg/kg)	BTEX				pH	EC (mmhos/cm)	SAR	Metals												
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)				Arsenic TCLP (mg/L)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium III (mg/kg)	Chromium VI (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Analytical Method			8015C / 8250C	8260C	8260C	8260C	8260C	9045 D	9050A	3050B / 8010C	1311 / 3010A / 6010C	3050B / 6020A	3050B / 6010C	3050B / 6010C	3050B / 6010C	7196A	3050B / 6010C	3050B / 6010C	7471	3050B / 6010C	3050B / 6010C	3050B / 6010C	3050B / 6010C
Area 4B	03/12/2015	DFMF-Area 4B-Annual	96	< 0.002	< 0.002	< 0.002	< 0.002	8.48	1.11	1.74	< 0.300	6.96	4,140	1.35	17.8	< 0.523	28.6	13.5	0.0494	20.1	< 3.80	< 0.633	87.2
Area 4C	03/12/2015	DFMF-Area 4C-Annual	1900.829	< 0.002	< 0.002	< 0.002	< 0.002	8.28	1.23	3.05	< 0.300	7.62	2,820	0.831	14.7	2.02	28.8	15.1	0.0737	20.2	< 3.31	< 0.552	84.4
Area 4C	07/29/2015	DFMF Facility-Area 4C-Annual	86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Area 4D	03/12/2015	DFMF-Area 4D-Annual	380	< 0.002	< 0.002	< 0.002	< 0.002	8.83	0.571	0.998	< 0.300	3.84	4,360	0.486 J	10.6	0.248 J	19.7	10.1	0.0298	13.4	< 3.33	< 0.555	49.3
Area 3D	03/12/2015	DFMF-Area 3D-Annual	140	< 0.002	< 0.002	< 0.002	< 0.002	8.54	0.645	1.90	< 0.300	3.94	3,850	0.621	12.5	0.306 J	16.4	8.57	0.0304	12.3	< 3.48	< 0.579	50.1
Area 2D	03/12/2015	DFMF-Area 2D-Annual	350.440	< 0.002	< 0.002	< 0.002	< 0.002	8.45	0.764	1.92	< 0.300	4.65	4,690	0.783	13.7	0.194 J	22.5	10.6	0.0311	15.4	< 3.49	< 0.582	58.8
Table 910-1 Allowable Level			500	0.17	85	100	175	6-9	<4	<12	-	0.39	15,000	70	120,000	23	3,100	400	23	1,600	390	390	23,000

mg/kg - milligram per kilogram
 mg/L - milligrams per liter
 TPH - total petroleum hydrocarbons
 EC - electrical conductivity
 mmhos/cm - millimhos per centimeter
 SAR - sodium absorption ratio
 J - result greater than the detection limit but less than the reporting limit
 NA - not analyzed

Results in bold exceed COGCC Table 910-1 allowable levels.

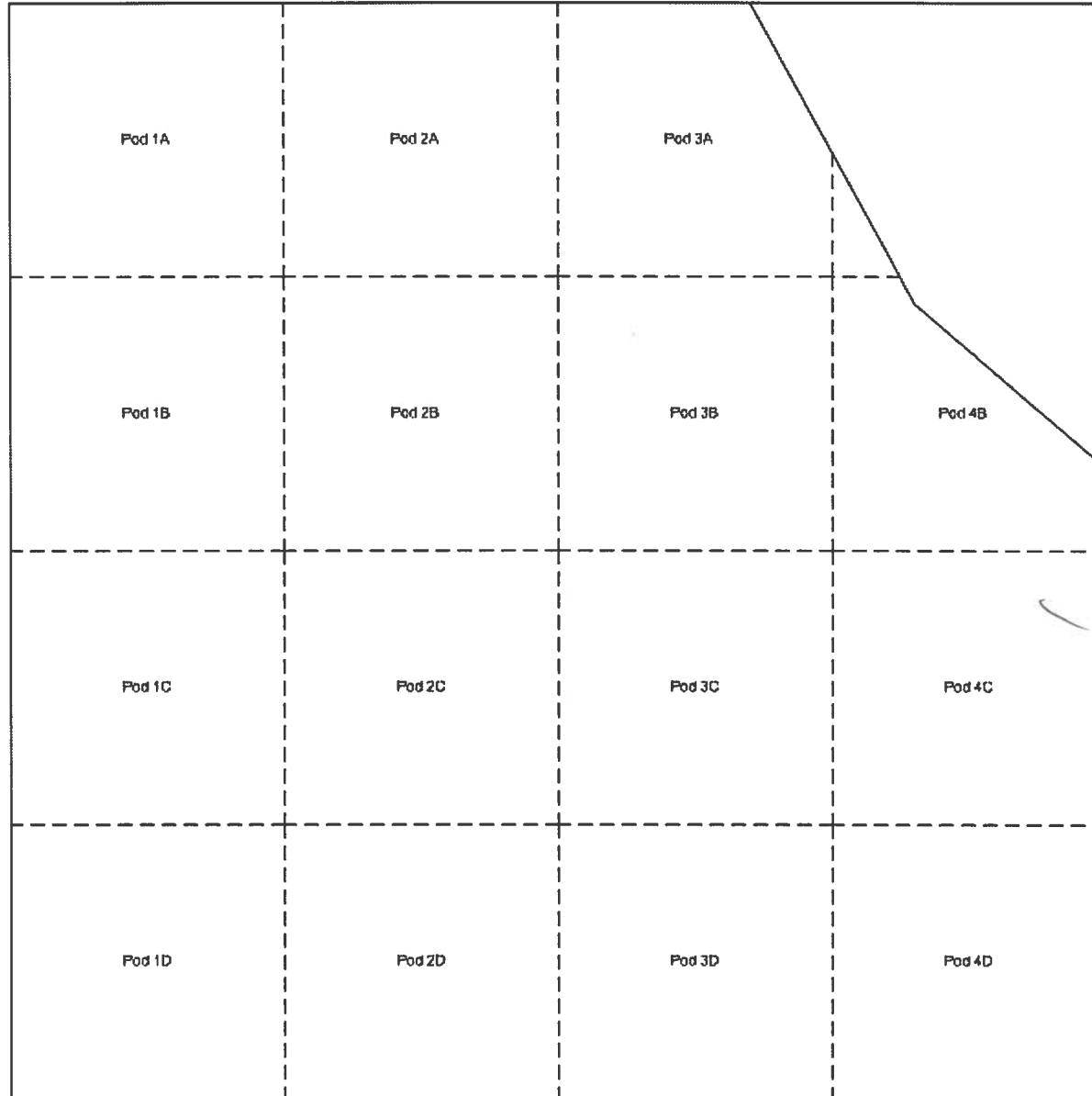


Figure 1
DFMF Pod Layout
Kerr-McGee Oil & Gas Onshore, LP
SW Sec. 34-T3N-R66W



March 23, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - DFMF Facility

Project Number - [none]

Attached are your analytical results for DFMF Facility received by Origins Laboratory, Inc. March 12, 2015. This project is associated with Origins project number X503154-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DFMF-Area 4B-Annual	X503154-01	Soil	March 12, 2015 10:45	03/12/2015 16:00
DFMF-Area 4C-Annual	X503154-02	Soil	March 12, 2015 11:00	03/12/2015 16:00
DFMF-Area 4D-Annual	X503154-03	Soil	March 12, 2015 11:16	03/12/2015 16:00
DFMF-Area 3D-Annual	X503154-04	Soil	March 12, 2015 11:32	03/12/2015 16:00
DFMF-Area 2D-Annual	X503154-05	Soil	March 12, 2015 11:45	03/12/2015 16:00

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFME Facility

www.originslaboratory.com

XS05154

page / of /

ORIGINS
 LABORATORY, INC

Client: Tasman Geo
 Address: _____
 Telephone Number: 912 28 2807
 Email Address: YCORNEZ@TASMAN.GEO.CO

Project Manager: Bob Cornez
 Project Name: DFME Facility
 Project Number: _____
 Samples Collected By: Brant Nelson

Sample ID Description	Date Sampled	Time Sampled	# of Containers				Preservative			Matrix			Analysis		Sample Instructions		
			Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ #	Other	GBTE	TAH - Del 1000	PH/EC/SAR	TCF		Trace Metals	
DFME - Area 4B - Annual	3/12/15	1045	5	Y							X			X	X	X	Low report limits! for TPH etc
DFME - Area 4C - Annual	3/12/15	1100	5	Y							X			X	X	X	all samples
DFME - Area 4D - Annual	3/12/15	1116	5	X							X			X	X	X	
DFME - Area 3D - Annual	3/12/15	1132	5	X							X			X	X	X	
DFME - Area 2D - Annual	3/12/15	1145	5	X							X			X	X	X	
Relinquished By: _____	Date: 3/12/15	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____
Relinquished By: _____	Date: 3/12/15	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____	Time: _____

1725 EK Place | Denver, CO 80211 | Phone 303 433 1322 | Fax 303 265 9645

Temp Received: 4.7 Date Results Needed: _____

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Origins Laboratory

F-012207-01-R1
 Effective Date 01/09/12

Sample Receipt Checklist

Origins Work Order: XS08154 Client: Tasman
 Client Project ID: DFMF Facility
 Checklist Completed by: Jen Pellegrini Shipped Via: HLI
 Date/time completed: 3/13/15 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A
 Matrix(s) Received (Check all that apply): Soil/Solid Water Other _____
 Cooler Number/Temperature: 1 / 4.9 c / _____ °C / _____ °C (Describe)
 Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 5°C ⁽¹⁾ ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	X			
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			pH
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ½ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity / pH < 2 for samples preserved with HNO3 HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) _____

Date/Time Reviewed _____

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

DFMF-Area 4B-Annual
3/12/2015 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503154-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	96	25	mg/kg	1	5C16007	03/16/2015	03/16/2015	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: *o*-Terphenyl 59.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5C16006	03/17/2015	03/18/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "

Surrogate: Toluene-d8 101 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Metals by 7471 Cold Vapor

Mercury	0.0494	0.0136	mg/kg dry	1	1464252	03/16/2015	03/17/2015	
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Metals by SW846 3050B/6010C

Barium	4140	6.33	mg/kg dry	10	1464076	"	03/16/2015	
Cadmium	1.35	0.633	"	1	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 4B-Annual
 3/12/2015 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-01 (Soil)**

Metals by SW846 3050B/6010C

Chromium	17.8	0.633	mg/kg dry	1	1464076	03/16/2015	03/16/2015	
Copper	28.6	1.27	"	"	"	"	"	
Lead	13.5	1.27	"	"	"	"	"	
Nickel	20.1	0.633	"	"	"	"	"	
Selenium	ND	3.80	"	"	"	"	"	U
Silver	ND	0.633	"	"	"	"	"	U
Zinc	87.2	1.27	"	"	"	"	"	

Metals by SW846 3050B/6020A

Arsenic	6.96	1.31	mg/kg dry	2	1464062	"	03/18/2015	
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Metals by SW846_7196A

Hexavalent Chromium	ND	0.523	mg/kg dry	1	1464513	03/17/2015	03/18/2015	U
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pH in Soil by EPA 9045D

pH	8.48		pH Units	1	5C16008	03/16/2015	03/17/2015	
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SAR Metals by SW846 3050B/6010C

Calcium	43000	31.6	mg/kg dry	1	1464075	03/16/2015	03/16/2015	
Magnesium	6520	38.0	"	"	"	"	"	
Sodium	1470	31.6	"	"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

DFMF-Area 4B-Annual
3/12/2015 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X503154-01 (Soil)

Sodium Adsorption Ratio

Sodium Adsorption Ratio	1.74		none	1	1465041		03/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.11		mmhos/cm	1	5C16009	03/16/2015	03/17/2015	
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TCLP Metals by 1311/3010A/6010C

Arsenic	ND	0.300	mg/L	1	1464561	03/17/2015	03/18/2015	U
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 4C-Annual
 3/12/2015 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.
 X503154-02 (Soil)**

DRO/RRO by EPA8015C

Diesel (C10-C28)	1700	25	mg/kg	1	5C16007	03/16/2015	03/16/2015	
Residual Range Organics (C28-C36)	200	100	"	"	"	"	"	

Surrogate: *o*-Terphenyl 79.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.829	0.200	mg/kg	1	5C16006	03/17/2015	03/18/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "
 Surrogate: Toluene-d8 104 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 94.3 % 70-130 " " "

Metals by 7471 Cold Vapor

Mercury	0.0737	0.0137	mg/kg dry	1	1464252	03/16/2015	03/17/2015	
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Metals by SW846 3050B/6010C

Barium	2820	5.52	mg/kg dry	10	1464076	"	03/16/2015	
Cadmium	0.831	0.552	"	1	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

DFMF-Area 4C-Annual
3/12/2015 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X503154-02 (Soil)

Metals by SW846 3050B/6010C

Chromium	14.7	0.552	mg/kg dry	1	1464076	03/16/2015	03/16/2015	
Copper	28.8	1.10	"	"	"	"	"	
Lead	15.1	1.10	"	"	"	"	"	
Nickel	20.2	0.552	"	"	"	"	"	
Selenium	ND	3.31	"	"	"	"	"	U
Silver	ND	0.552	"	"	"	"	"	U
Zinc	84.4	1.10	"	"	"	"	"	

Metals by SW846 3050B/6020A

Arsenic	7.62	1.05	mg/kg dry	2	1464062	"	03/18/2015	
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Metals by SW846_7196A

Hexavalent Chromium	2.02	0.472	mg/kg dry	1	1464513	03/17/2015	03/18/2015	
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pH in Soil by EPA 9045D

pH	8.28		pH Units	1	5C16008	03/16/2015	03/17/2015	
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SAR Metals by SW846 3050B/6010C

Calcium	43700	27.6	mg/kg dry	1	1464075	03/16/2015	03/16/2015	
Magnesium	7040	33.1	"	"	"	"	"	
Sodium	2600	27.6	"	"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 4C-Annual
 3/12/2015 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-02 (Soil)**

Sodium Adsorption Ratio

Sodium Adsorption Ratio	3.05		none	1	1465041		03/23/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.23		mmhos/cm	1	5C16009	03/16/2015	03/17/2015	
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TCLP Metals by 1311/3010A/6010C

Arsenic	ND	0.300	mg/L	1	1464561	03/17/2015	03/18/2015	U
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Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 4D-Annual
 3/12/2015 11:16:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.
 X503154-03 (Soil)**

DRO/RRO by EPA8015C

Diesel (C10-C28)	380	25	mg/kg	1	5C16007	03/16/2015	03/19/2015	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl	79.9 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5C16006	03/17/2015	03/18/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.1 %	70-130			"	"	"	

Metals by 7471 Cold Vapor

Mercury	0.0298	0.0129	mg/kg dry	1	1464252	03/16/2015	03/17/2015	
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Metals by SW846 3050B/6010C

Barium	4360	5.55	mg/kg dry	10	1464076	"	03/16/2015	
Cadmium	0.486	0.555	"	1	"	"	"	J

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 4D-Annual
 3/12/2015 11:16:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-03 (Soil)**

Metals by SW846 3050B/6010C

Chromium	10.6	0.555	mg/kg dry	1	1464076	03/16/2015	03/16/2015	
Copper	19.7	1.11	"	"	"	"	"	
Lead	10.1	1.11	"	"	"	"	"	
Nickel	13.4	0.555	"	"	"	"	"	
Selenium	ND	3.33	"	"	"	"	"	U
Silver	ND	0.555	"	"	"	"	"	U
Zinc	49.3	1.11	"	"	"	"	"	

Metals by SW846 3050B/6020A

Arsenic	3.84	1.07	mg/kg dry	2	1464062	"	03/18/2015	
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Metals by SW846_7196A

Hexavalent Chromium	0.248	0.466	mg/kg dry	1	1464513	03/17/2015	03/18/2015	J
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pH in Soil by EPA 9045D

pH	8.83		pH Units	1	5C16008	03/16/2015	03/17/2015	
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SAR Metals by SW846 3050B/6010C

Calcium	32800	27.7	mg/kg dry	1	1464075	03/16/2015	03/16/2015	
Magnesium	3450	33.3	"	"	"	"	"	
Sodium	711	27.7	"	"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Comez
Project Number: [none]
Project: DFMF Facility

**DFMF-Area 4D-Annual
3/12/2015 11:16:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
X503154-03 (Soil)**

Sodium Adsorption Ratio

Sodium Adsorption Ratio	0.998		none	1	1465041		03/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.571		mmhos/cm	1	5C16009	03/16/2015	03/17/2015	
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TCLP Metals by 1311/3010A/6010C

Arsenic	ND	0.300	mg/L	1	1464561	03/17/2015	03/18/2015	U
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

DFMF-Area 3D-Annual
3/12/2015 11:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503154-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	140	25	mg/kg	1	5C16007	03/16/2015	03/16/2015	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl 67.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5C16006	03/17/2015	03/18/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 94.4 % 70-130 " " "

Metals by 7471 Cold Vapor

Mercury	0.0304	0.0136	mg/kg dry	1	1464252	03/16/2015	03/17/2015	
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Metals by SW846 3050B/6010C

Barium	3850	5.79	mg/kg dry	10	1464076	"	03/16/2015	
Cadmium	0.621	0.579	"	1	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 3D-Annual
 3/12/2015 11:32:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-04 (Soil)**

Metals by SW846 3050B/6010C

Chromium	12.5	0.579	mg/kg dry	1	1464076	03/16/2015	03/16/2015	
Copper	16.4	1.16	"	"	"	"	"	
Lead	8.57	1.16	"	"	"	"	"	
Nickel	12.3	0.579	"	"	"	"	"	
Selenium	ND	3.48	"	"	"	"	"	U
Silver	ND	0.579	"	"	"	"	"	U
Zinc	50.1	1.16	"	"	"	"	"	

Metals by SW846 3050B/6020A

Arsenic	3.94	1.07	mg/kg dry	2	1464062	"	03/18/2015	
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Metals by SW846_7196A

Hexavalent Chromium	0.306	0.469	mg/kg dry	1	1464513	03/17/2015	03/18/2015	J
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pH in Soil by EPA 9045D

pH	8.54		pH Units	1	5C16008	03/16/2015	03/17/2015	
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SAR Metals by SW846 3050B/6010C

Calcium	24900	29.0	mg/kg dry	1	1464075	03/16/2015	03/16/2015	
Magnesium	3740	34.8	"	"	"	"	"	
Sodium	1220	29.0	"	"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 3D-Annual
 3/12/2015 11:32:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-04 (Soil)**

Sodium Adsorption Ratio

Sodium Adsorption Ratio	1.90		none	1	1465041		03/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.645		mmhos/cm	1	5C16009	03/16/2015	03/17/2015	
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TCLP Metals by 1311/3010A/6010C

Arsenic	ND	0.300	mg/L	1	1464561	03/17/2015	03/18/2015	U
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

DFMF-Area 2D-Annual
3/12/2015 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503154-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	350	25	mg/kg	1	5C16007	03/16/2015	03/16/2015	
Residual Range Organics (C28-C36)	ND	100	"	"	"	"	"	

Surrogate: o-Terphenyl 73.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.440	0.200	mg/kg	1	5C16006	03/17/2015	03/18/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "
 Surrogate: Toluene-d8 103 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 96.8 % 70-130 " " "

Metals by 7471 Cold Vapor

Mercury	0.0311	0.0138	mg/kg dry	1	1464252	03/16/2015	03/17/2015	
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Metals by SW846 3050B/6010C

Barium	4690	5.82	mg/kg dry	10	1464076	"	03/16/2015	
Cadmium	0.783	0.582	"	1	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 2D-Annual
 3/12/2015 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-05 (Soil)**

Metals by SW846 3050B/6010C

Chromium	13.7	0.582	mg/kg dry	1	1464076	03/16/2015	03/16/2015	
Copper	22.5	1.16	"	"	"	"	"	
Lead	10.6	1.16	"	"	"	"	"	
Nickel	15.4	0.582	"	"	"	"	"	
Selenium	ND	3.49	"	"	"	"	"	U
Silver	ND	0.582	"	"	"	"	"	U
Zinc	58.8	1.16	"	"	"	"	"	

Metals by SW846 3050B/6020A

Arsenic	4.65	1.18	mg/kg dry	2	1464062	"	03/18/2015	
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Metals by SW846_7196A

Hexavalent Chromium	0.194	0.471	mg/kg dry	1	1464513	03/17/2015	03/18/2015	J
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pH in Soil by EPA 9045D

pH	8.45		pH Units	1	5C16008	03/16/2015	03/17/2015	
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SAR Metals by SW846 3050B/6010C

Calcium	36400	29.1	mg/kg dry	1	1464075	03/16/2015	03/16/2015	
Magnesium	4630	34.9	"	"	"	"	"	
Sodium	1460	29.1	"	"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

**DFMF-Area 2D-Annual
 3/12/2015 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC
 X503154-05 (Soil)**

Sodium Adsorption Ratio

Sodium Adsorption Ratio	1.92		none	1	1465041		03/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.764		mmhos/cm	1	5C16009	03/16/2015	03/17/2015	
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TCLP Metals by 1311/3010A/6010C

Arsenic	ND	0.300	mg/L	1	1464561	03/17/2015	03/18/2015	U
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16006 - EPA 5030 (soil)										
Blank (5C16006-BLK1)										
Prepared: 03/16/2015 Analyzed: 03/17/2015										
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	65.7		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	59.6		"	62.5		95.3	70-130			
Surrogate: 4-Bromofluorobenzene	58.4		"	62.5		93.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16006 - EPA 5030 (soil)										
LCS (5C16006-BS1)					Prepared: 03/16/2015 Analyzed: 03/17/2015					
Benzene	0.122	0.002	mg/kg	0.100		122	77.1-124			
Toluene	0.100	0.002	"	0.100		100	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		89.9	66.4-127			
m,p-Xylene	0.173	0.004	"	0.200		86.4	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	80.0		ug/kg	62.5		128	70-130			
Surrogate: Toluene-d8	72.1		"	62.5		115	70-130			
Surrogate: 4-Bromofluorobenzene	64.2		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16006 - EPA 5030 (soil)										
Matrix Spike (5C16006-MS1)			Source: X503152-01			Prepared: 03/16/2015 Analyzed: 03/17/2015				
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126			
Toluene	0.082	0.002	"	0.100	ND	81.8	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	87.9	62.2-130			
m,p-Xylene	0.175	0.004	"	0.200	ND	87.5	46.5-137			
o-Xylene	0.093	0.002	"	0.100	ND	92.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	69.0		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	57.5		"	62.5		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	63.9		"	62.5		102	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16006 - EPA 5030 (soil)										
Matrix Spike Dup (5C16006-MSD1)		Source: X503152-01			Prepared: 03/16/2015 Analyzed: 03/17/2015					
Benzene	0.115	0.002	mg/kg	0.100	ND	115	71.8-126	8.40	11.3	
Toluene	0.088	0.002	"	0.100	ND	88.2	65.1-130	7.51	15.4	
Ethylbenzene	0.079	0.002	"	0.100	ND	79.5	62.2-130	10.1	19.6	
m,p-Xylene	0.168	0.004	"	0.200	ND	84.2	46.5-137	3.80	19.2	
o-Xylene	0.088	0.002	"	0.100	ND	88.1	54.2-134	5.20	17.9	
Surrogate: 1,2-Dichloroethane-d4	77.5		ug/kg	62.5		124	70-130			
Surrogate: Toluene-d8	62.4		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	66.0		"	62.5		106	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C16007 - EPA 3580

Blank (5C16007-BLK1)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							

Surrogate: o-Terphenyl	50		"	50.0		99.9	59-131			
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LCS (5C16007-BS1)

Prepared: 03/16/2015 Analyzed: 03/19/2015

Diesel (C10-C28)	1000	50	mg/kg	1000		103	64-121			
Residual Range Organics (C28-C36)	1100	200	"	1000		107	58-124			

Surrogate: o-Terphenyl	48		"	50.0		95.8	59-131			
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Matrix Spike (5C16007-MS1)

Source: X503121-01

Prepared: 03/16/2015 Analyzed: 03/17/2015

Diesel (C10-C28)	950	50	mg/kg	1000	26	92.8	53-125			
Residual Range Organics (C28-C36)	960	200	"	1000	21	94.1	47-133			

Surrogate: o-Terphenyl	39		"	50.0		78.9	59-131			
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Matrix Spike Dup (5C16007-MSD1)

Source: X503121-01

Prepared: 03/16/2015 Analyzed: 03/17/2015

Diesel (C10-C28)	850	50	mg/kg	1000	26	82.8	53-125	11.0	20	
Residual Range Organics (C28-C36)	850	200	"	1000	21	82.5	47-133	12.8	20	

Surrogate: o-Terphenyl	37		"	50.0		74.3	59-131			
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16008 - NO PREP										
Duplicate (5C16008-DUP1)		Source: X503154-01			Prepared: 03/16/2015 Analyzed: 03/17/2015					
pH	8.57		pH Units		8.48			1.06	25	
Batch 5C16009 - NO PREP										
Blank (5C16009-BLK1)		Prepared: 03/16/2015 Analyzed: 03/17/2015								
Specific Conductance (EC)	0.00270		mmhos/cm							
Duplicate (5C16009-DUP1)		Source: X503154-01			Prepared: 03/16/2015 Analyzed: 03/17/2015					
Specific Conductance (EC)	1.09		mmhos/cm		1.11			2.18	25	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Metals by SW846 3050B/6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1464076 - SW846 3050B

BLANK (1203280588-BLK)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Nickel	ND	0.478	mg/kg				-			U
Cadmium	ND	0.478	"				-			U
Chromium	ND	0.478	"				-			U
Copper	ND	0.956	"				-			U
Lead	ND	0.956	"				-			U
Selenium	ND	2.87	"				-			U
Silver	ND	0.478	"				-			U
Zinc	ND	0.956	"				-			U
Barium	ND	0.478	"				-			U

LCS (1203280589-BKS)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Chromium	50.1	0.485	mg/kg	48.5	103	80-120				
Zinc	49.6	0.971	"	48.5	102	80-120				
Silver	49.5	0.485	"	48.5	102	80-120				
Selenium	50.5	2.91	"	48.5	104	80-120				
Nickel	49.9	0.485	"	48.5	103	80-120				
Copper	51.2	0.971	"	48.5	105	80-120				
Cadmium	51.0	0.485	"	48.5	105	80-120				
Barium	51.0	0.485	"	48.5	105	80-120				
Lead	51.1	0.971	"	48.5	105	80-120				

DUP (1203280590 D)

Source: 368826001

Prepared: 03/16/2015 Analyzed: 03/16/2015

Nickel	12.1	0.532	mg/kg dry		13.6	0-20	12.0	20		
Barium	168	0.532	"		165	0-20	1.90	20		
Silver	ND	0.532	"		<0.106	0-20	24.5	20		U
Zinc	68.5	1.06	"		78.3	0-20	13.4	20		
Selenium	ND	3.19	"		<0.532	0-20	36.9	20		U

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Metals by SW846 3050B/6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1464076 - SW846 3050B										
DUP (1203280590 D)			Source: 368826001			Prepared: 03/16/2015 Analyzed: 03/16/2015				
Lead	17.6	1.06	mg/kg dry		20.9		0-20	17.0	20	
Copper	20.4	1.06	"		22.3		0-20	9.12	20	
Cadmium	0.260	0.532	"		0.346		0-20	28.5	20	J
Chromium	7.98	0.532	"		9.78		0-20	20.2	20	
MS (1203280591 S)			Source: 368826001			Prepared: 03/16/2015 Analyzed: 03/16/2015				
Barium	222	0.533	mg/kg dry	53.3	165	107	75-125			
Cadmium	51.5	0.533	"	53.3	0.346	96	75-125			
Chromium	61.7	0.533	"	53.3	9.78	97.4	75-125			
Copper	75.7	1.07	"	53.3	22.3	100	75-125			
Lead	69.5	1.07	"	53.3	20.9	91.2	75-125			
Nickel	62.2	0.533	"	53.3	13.6	91	75-125			
Selenium	50.7	3.20	"	53.3	<0.533	95	75-125			
Silver	52.7	0.533	"	53.3	<0.107	98.8	75-125			
Zinc	120	1.07	"	53.3	78.3	79	75-125			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Metals by SW846 3050B/6020A - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1464062 - SW846 3050B										
BLANK (1203280546-BLK)					Prepared: 03/16/2015 Analyzed: 03/18/2015					
Arsenic	ND	0.963	mg/kg				-			U
LCS (1203280547-BKS)					Prepared: 03/16/2015 Analyzed: 03/18/2015					
Arsenic	4.17	0.998	mg/kg	4.99		83.6	80-120			
DUP (1203280548 D)					Source: X503154-01 Prepared: 03/16/2015 Analyzed: 03/18/2015					
Arsenic	8.34	1.29	mg/kg dry		6.96		0-20	18.1	20	
MS (1203280549 S)					Source: X503154-01 Prepared: 03/16/2015 Analyzed: 03/18/2015					
Arsenic	13.0	1.31	mg/kg dry	6.56	6.96	91.9	75-125			

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Comez
 Project Number: [none]
 Project: DFMF Facility

Metals by SW846_7196A - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1464513 - SW846 3060A										
BLANK (1203281913-BLK)					Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	ND	0.399	mg/kg				-			U
LCS (1203281914-BKS)					Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	4.05	0.397	mg/kg	3.97		102	80-120			
ILCS (1203281915-ILCS)					Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	6.56	0.398	mg/kg	7.96		82.4	80-120			
DUP (1203281916 D)					Source: X503154-01 Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	ND	0.527	mg/kg dry		<0.158		0-50	125	50	U
MS (1203281917 S)					Source: X503154-01 Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	1.36	0.527	mg/kg dry	5.27	<0.158	25.9	75-125			
MSD (1203281919 SD)					Source: X503154-01 Prepared: 03/17/2015 Analyzed: 03/18/2015					
Hexavalent Chromium	3.84	0.527	mg/kg dry	5.27	<0.158	73	75-125	95.3	30	

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

TCLP Metals by 1311/3010A/6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1464561 - SW846 3010A										
MS (1203280923 S)			Source: X503154-01		Prepared: 03/17/2015 Analyzed: 03/18/2015					
Arsenic	4.50	0.300	mg/L	5.00	<0.050	90	75-125			
TB (1203280924-BLK)			Prepared: 03/17/2015 Analyzed: 03/18/2015							
Arsenic	ND	0.300	mg/L				-			U
BLANK (1203282053-BLK)			Prepared: 03/17/2015 Analyzed: 03/18/2015							
Arsenic	ND	0.300	mg/L				-			U
LCS (1203282054-BKS)			Prepared: 03/17/2015 Analyzed: 03/18/2015							
Arsenic	5.26	0.300	mg/L	5.00		105	80-120			
DUP (1203282055 D)			Source: X503154-01		Prepared: 03/17/2015 Analyzed: 03/18/2015					
Arsenic	ND	0.300	mg/L		<0.050		0-20	124	20	U

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

Notes and Definitions

- U Result not detected above the detection limit
 - N Spiked sample recovery not within control limits
 - J Greater than the detection limit but less than the reporting limit
 - ND Analyte NOT DETECTED at or above the reporting limit
 - RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



August 04, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - DFMF Facility

Project Number - [none]

Attached are your analytical results for DFMF Facility received by Origins Laboratory, Inc. July 29, 2015. This project is associated with Origins project number X507406-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DFMF Facility-Area 4C-Annual	X507406-01	Soil	July 29, 2015 12:15	07/29/2015 16:30

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

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X50740

ORIGINS
 LABORATORY, INC

page 1 of 1

Client: Tasman Geosciences
 Address: 6899 Pecos St
 Telephone Number: 916 230 2807
 Email Address: lcornez@tasman-geo.com

Project Manager: Bob Cornez
 Project Name: DFMF Facility
 Project Number:
 Samples Collected By: Bob Nelson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	Turnaround Time:
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As Summed	Other			
DFMF Facility - Area 4C - Archaic	7/29/15	1215	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			GO-TE 2:00	Change made per email w/ Bob	Same Day
												TPH - DR2/DR2/LOW	go 7/30/15	
												PH/EC/SAR		
												Flux 46 - 100% (data not shown)		
												TEP - Archaic		

Relinquished By: [Signature] Date: 7/29/15 Time: 1630
 Relinquished By: [Signature] Date: 7/29/15 Time: 1630

Date Result Needed

2

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X507406

Client: Tasman

Client Project ID: DFMF Facility

Checklist Completed by: Jeff Cornez

Shipped Via: 41D
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 7/3/12

Airbill #: N/A

Matrix(s) Received (Check all that apply): Soil/Solid Water Other _____

Cooler Number/Temperature: 1 / 121 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ^{1)?}	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ^{1)?}	X			
Was adequate sample volume provided ^{1)?}	X			
Are short holding time analytes or samples with HTs due within 48 hours present ^{1)?}		X		
Is a chain-of-custody (COC) present and filled out completely ^{1)?}	X			
Does the COC agree with the number and type of sample bottles received ^{1)?}	X			
Do the sample IDs on the bottle labels match the COC ^{1)?}	X			
Is the COC properly relinquished by the client with date and time recorded ^{1)?}	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked ^{1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity/pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

¹⁾ If NO then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Jeff Cornez
 Reviewed by (Project Manager)

7/3/12
 Date/Time Reviewed

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

DFMF Facilityv-Area 4C-Annual
7/29/2015 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507406-01 (Soil)

TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50	mg/kg	1	5G30006	07/30/2015	07/30/2015	
Diesel (C10-C28)	86	50	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
Surrogate: o-Terphenyl	69.5 %	65-146			"	"	"	

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: DFMF Facility

Extractable Petroleum Hydrocarbons by 8015C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5G30006 - EPA 3580										
Blank (5G30006-BLK1)										
Prepared: 07/30/2015 Analyzed: 07/30/2015										
Gasoline (C6-C10)	ND	50	mg/kg							
Diesel (C10-C28)	ND	50	"							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	40.4		"	50.0		80.7	65-146			
LCS (5G30006-BS1)										
Prepared: 07/30/2015 Analyzed: 07/30/2015										
Gasoline (C6-C10)	890	50	mg/kg	1000		89.5	66.7-119			
Diesel (C10-C28)	820	50	"	1000		82.0	70.1-127			
Residual Range Organics (C28-C36)	920	200	"	1000		92.3	54.5-139			
Surrogate: o-Terphenyl	46.4		"	50.0		92.8	65-146			
Matrix Spike (5G30006-MS1)										
Source: X507387-02										
Prepared: 07/30/2015 Analyzed: 07/30/2015										
Gasoline (C6-C10)	830	50	mg/kg	1000	ND	83.1	56.4-132			
Diesel (C10-C28)	780	50	"	1000	28	75.0	57.4-138			
Residual Range Organics (C28-C36)	930	200	"	1000	ND	93.0	47.7-129			
Surrogate: o-Terphenyl	36.9		"	50.0		73.9	65-146			
Matrix Spike Dup (5G30006-MSD1)										
Source: X507387-02										
Prepared: 07/30/2015 Analyzed: 07/30/2015										
Gasoline (C6-C10)	970	50	mg/kg	1000	ND	96.9	56.4-132	15.4	22	
Diesel (C10-C28)	860	50	"	1000	28	82.9	57.4-138	9.63	18.3	
Residual Range Organics (C28-C36)	1000	200	"	1000	ND	100	47.7-129	7.62	30.1	
Surrogate: o-Terphenyl	42.1		"	50.0		84.2	65-146			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: DFMF Facility

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini For Noelle Doyle Mathis, President